

## **Village of Laurelville WWTP Renovation Project**

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12/11/2004

Lula Spruill, Project Officer  
U.S. Environmental Protection Agency  
77 West Jackson Blvd  
Chicago, IL 60604

Re: Request for Extension  
Grant #XP9759701-0 – Village of Laurelville, OH

Dear Lulu,

In response to your request for further information, several documents are being submitted attached and in addition to this document.

Attached you will find the current status of each of the originally submitted list items for the renovation project. Items completed are shown in red, with quarter of completion and a brief summary of work performed. Work in progress or yet to be completed are shown in black in the status column. Projected quarters of completion are indicated in that same narrative.

In the other attachment, you will find an updated work narrative listing, again, items to be completed and outlined work performed.

I trust the current status report attached will give you the answer to “why” the work has not yet been performed. In the case of Item 8, the necessary equipment is waiting to be installed pending Ohio EPA approval and issuance of the necessary P-T-I as indicated in previous correspondence.

Moving on to the other line items, please consider the following:

- Item 1 – Restoration of existing comminutor: This particular piece of equipment has been in place since 1984. The manufacturer has changed hands on numerous occasions, and plant personnel are working diligently to find its current ownership. A decision can then be made based on that information whether or not to rehabilitate the existing unit, or replace it. When that decision is made, the electrical contractor can decide whether to use or replace the control panel and associated triggering devices (from the lift station pumps) that initiate the on/off cycle. This is currently priority one, since it is an important piece of equipment for preparing wastes for treatment. It is estimated the renovation/replacement of this unit and controls will occur by Summer 2005, pending grant extension.
- Item 13 – Replacement of office/lab sewage grinder pump: This item is lower priority, thus has not been completed. It is important for safety and health reasons that it is completed, however. Materials have been onsite since March 2001. There is reluctance on the part of local excavation contractors to remove the old tank and replace with the

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new. Village administration needs to advertise this portion of the project for bid to draw on contractors outside the village. The electrical contractor cannot complete his portion of this item until the new unit is installed. Further, placement of this pump/tank may be dependent upon the location of List Item 20. It is estimated this project will be completed by Spring 2006, or Winter 2006 if the Administration/Billing offices dictate.

- Item 14 – Composite samplers: This item has been moved from “repair or replace” to replace only. It has been determined the existing refrigeration units are non-reparable. The enclosures have been utilized to house injection units for the various bacteria introduced to raw sewage and filtration areas. Because alternate temporary techniques are being used to gather samples, this item was moved to low priority. Cost is a huge factor. Replacement units cost approximately \$20-25000 each. It is anticipated this item will be completed in the Spring of 2006.
- Items 16-19 – Equipment purchases: The remaining incomplete items in this list item include the inspection camera and backhoe/mini-excavator. The camera will have a price tag in the \$25000 range; the backhoe in the \$45000 range. The current budget of the Village does not allow such expenditures at this time. Safety equipment and tools are being purchased in small lots, therefore are not as much of a strain on the renovation budget. Only 20% or less of these items remains and estimates of completion are Summer 2006.
- Item 20 – Administration/Billing offices: Of all items, this is the high dollar item. The village cannot afford a \$60,000 expense at this time. It is estimated this item will be completed by Winter 2006.

Ms. Spruill, the Village has tried to meet the expenses of renovations, and truly appreciates the grant funds from the USEPA. Try as it might, the struggles of a small Appalachian village for financial advancement are terribly difficult. The income levels of residents have been provided, and any rate increases have been applied to the renovation project, and to paying the loan assumed by the village for work completed prior to the grant.

Additionally, the Village of Adelphi has not yet connected to the Village of Laurelville facility. I recently received minutes from a meeting held October 12, 2004 with representatives from both villages and the Adelphi sewage collection project consultants. The collection system project began in 1999. The contractor did not complete the project; in fact, filed bankruptcy when the installation of the collection system was less than 75% complete. In the meeting minutes, billing practices, pump and pipe sizing, the number of residential connections, and infiltration were discussed with no results. Yet the premature nature of this discussion appears to be foolish. There is yet to be a new contracting firm assigned to complete and repair the previous incomplete work. No estimate of when this might occur was given, and no future meetings between the villages was mentioned. (Dumm, 2004).

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This places the Village of Laurelville in a precarious financial position. It must fund its share of the renovation project, designed to return the plant treatment efficiency to 100% for the benefit of treating Laurelville AND Adelphi wastewater, with no revenue from the Village of Adelphi. This has placed an undue strain on the budget for the project and has increased the duration of the project.

As learned in any project management class, in such cases as this, something has to give...either time, or money. The Village realizes it stands to lose the grant money. It also is reasonably certain that with the extension of time, it can meet its commitment to returning the facility to be an efficient and compliant treatment works. Benefits of the rehabilitation have already occurred in the form of outstanding results of treated waters being returned to the receiving waters. The Village asks your consideration in allowing the two year extension so that it can complete these renovations, assuring that the facility will be in top condition for the next 25 years.

If you have any further questions, please feel free to contact me.

Regards,

M. Jean West, Project Manager  
Village of Laurelville



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List Item Number	Work Narrative	Status
1	<p>Restoration of existing comminutor to include:</p> <ul style="list-style-type: none"> <li>▪ Replacement of cutter bars and teeth</li> <li>▪ Replacement of bearings</li> <li>▪ Replacement of gear assembly</li> <li>▪ Replacement of drive motor</li> </ul> <p>The manufacturer of this piece of equipment has a "swap" policy, whereby the customer returns an old unit the company can refurbish. A refurbished unit is sent to the customer, and the customer is charged the price of refurbishing the old unit. Work will consist of removal of the old unit from the influent chamber, steam cleaning and spraying with a strong chlorine solution for disinfection, packaging and shipping the old unit; reinstallation of refurbished unit, replacement of electrical safety switch with NEMA4 30A 3Ø disconnect switch. Control panel is in good condition.</p>	<p>10% Complete as of 11/30/04.</p> <p>Electrical disconnect was replaced in the Summer of 2003 in conjunction with a float switch being placed in the comminutor channel. This temporary repair overrides the control panel in the office building which was meant to control the comminutor cycling in relation to raw sewage lift station pump running cycles.</p> <p>The manufacturer has either discontinued business, or is operating under a different name. This information is yet to be determined and will direct the course of action to be followed to complete the project item.</p> <p>Proposed timeline for completion is Summer 2005</p>
2,3,6	<p><b>Installation of aerated "Aqua-mat" hanging media filters in filters 1 &amp; 4. Installation of Nitro-soma injection lines in filters 1 &amp; 4 for ammonia-nitrogen reduction. Installation of new distribution piping in filters 1 &amp; 4. Installation of new distribution piping in filters 2 &amp; 3.</b></p> <p>Scope of work: Install hanging/floating fiber filters. Install aeration tubing and nitro-soma bacteria injection tubing. Build elevated treated lumber panel to hang mixing/metered injection apparatus. Install 15A 120V 1Ø electrical outlet to power the injector. Install oilless air compressor to feed aeration tubing. Install potable water supply for automated mixing and incubation of bacteria. Install inlet piping from dosing tank feed line across length of filter for disbursement of dosed lagoon effluent. Cut dividing wall (requires concrete boring) to accommodate distribution piping into adjacent intermittent sand filters. Install valves in existing under-drains of filters 1 and 4 to allow filter chambers to fill and contact filter media. The Ohio EPA has approved this process change.</p>	<p>Completed per scope of work; Summer 2003</p> <p>Hinde Engineering, Chicago, IL installed the hanging media filters and the injection and blower units. Plant personnel and sub-contractors completed the piping changes and wall cuts. The filters are performing admirably with excellent effluent resulting.</p>



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4	<p><b>Add pervious covers to media filters 1 and 4</b></p> <p>Outsource material and labor to low bidder meeting criteria.</p>	<p><u>Completed Summer 2003</u></p> <p>Media filter covers purchased from and installed by successful bidder.</p>
5	<p><b>Installation of equipment at the influent channel to introduce metered doses of toxin-free bacteria to assist in sludge digestion and improve the effectiveness of the aerated lagoon biological process.</b></p> <p>Build elevated treated lumber panel to hang mixing/metered injection apparatus. Install potable water supply for automated mixing and incubation/aeration of bacteria. Install drip feed into influent chamber for mixing with raw influent sewage</p>	<p><u>Completed Summer 2003</u></p> <p>Installation of materials by Hinde Engineering.</p>
7	<p><b>Replace defective effluent flow meter with new unit</b></p> <p>Cut effluent piping between disinfection chamber and receiving stream and install magnetic flow device. Install manhole and cover for access. Install remote reading device</p>	<p><u>Completed Summer 2003</u></p> <p>Contractor installed sonar flow meter and remote recording device</p>
8	<p><b>Replacement of existing gas chlorination equipment with an alternative method of disinfection, such as UV.</b></p> <p>Outsource - Remove all chlorine and chlorine equipment from the facility. Replace with UV tubes in sufficient quantity to kill all pathogenic bacteria with no residual or harmful byproducts to the receiving stream</p>	<p>Pending Ohio EPA P-T-I Estimated date of completion: Fall 2005</p> <p><u>Fall 2003, Materials purchased.</u> Installation and electrical work pending.</p>
9, 10	<p><b>Replacement of defective pumps and addition of spare pumps to inventory</b></p> <p>Removal of malfunctioning pump in Dosing chamber and Lift Station 1. Electrician to install new duplex control panels to alternate, start, and protect pumps. Install new pumps and test. Lift Station 1 pump to be capable of pumping 285GPM at 75TDH, and is to be rated at no greater than 10HP, 10A, 480V 3Ø, and shall pass a 3" solid without clogging. All pumps shall have moisture probes installed. Dosing Tank pump is to pump 825GMP at 28' TDH. The rated HP should not exceed 15HP, 50A, 480V 3Ø. Flanges for guide rails shall be included to fit discharge piping.</p>	<p><u>Completed Fall 2003 per scope of project.</u></p> <p>Lift Station 1 and 2 pumps replaced. One unit from each lift station has been rehabilitated and placed in inventory as a backup unit.</p> <p>Electrical rehabilitation was quite extensive in this phase and consisted of completely replacing pump control panel, elevated (due to flood plain) mounting platforms and vents, float switches, junction boxes, and wiring. Work performed by BJ's Electrical Service.</p>





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11	<p><b>Replace deteriorated and obsolete lift station pump guide rails with systems designed for existing/new pumps.</b></p> <p>Outsource - will require entry into a 35' deep raw sewage wet well. All hazardous entry safety precautions shall be taken. The scope of this project will be to remove the existing guide rails and foot pads and replace, anchor, and install new guide rails to mate the pumps. Replace all electrical boxes with NEMA 4 junction boxes, and replace Lead, Lag, Off, and Alarm float assemblies with new units. This project will require plugging two gravity main lines bringing raw sewage from the village. The nature of the flow indicates minimum impact to consumers will occur in the post-midnight hours. Every attempt should be made to proceed with the project during those hours, and to restore pumping as quickly as possible</p>	<p><u>Completed Spring 2004.</u></p> <p>Contractor installed new guide rails. See items 9, 10 for electrical rehabilitation.</p>
12	<p><b>Rewire and/or replace external controls, lighting, switching, motors and contacts damaged by hydrogen sulfide vapors and weather</b></p> <p>Replace any and all motor control stations, junction boxes, safety switches, receptacles, switches, security lighting, wiring, and circuit breakers to bring the safety and code of all electrical components in compliance with the NEC</p>	<p><u>90% Completed.</u> Ongoing until all projects completed.</p> <p>The electrical rehabilitation has been extremely difficult to perform. The original electrical contractor for plant construction (1981) died in an auto accident before he had the opportunity to submit detailed wiring schematics. Thus, the maze of wiring has to be sorted, traced, and in many cases replaced. All existing wiring is underground.</p> <p>The expenses incurred in electrical rehabilitation have far exceeded those originally estimated. This is, in part, due to the previously mentioned problem, and to the fact the former manager of the facility was a certified electrician and did electrical work as "part of the job". The current plant staff does not have the capability of performing such work.</p> <p>It is estimated the balance of the electrical rehabilitation will be completed by Fall 2005.</p>
13	<p><b>Replacement of defective office/lab sewage grinder pump</b></p> <p>Remove existing control panel, wiring, tank and piping and replace with new unit (purchased). Requires excavation to remove old unit and place new unit. Requires concrete to be poured around bottom flange to eliminate floating</p>	<p>This relatively simple task has yet to be performed. Materials have been onsite since March 2001. The problem is finding a subcontractor that will remove the old unit and replace it with the new. The electrical contractor must leave this portion of his rehabilitation work incomplete until such time as the tank is set. Estimated time of completion is Spring 2006.</p>



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14	<p><b>Repair or replace existing refrigerated composite samplers at influent chamber and effluent channel</b></p> <p>Remove old refrigerated composite samplers. Refrigeration units are non-functional and must be disposed of according to law. Replace with new timed samplers. Capacity is 5 gallons or less and must include an automatic shutoff to prevent overfilling during times plant is not manned</p>	<p>Ohio EPA requires two composite samplers be in place for raw sewage influent, and treated effluent. This is used for comparative sampling of treatment effectiveness and compliance. Each unit has a cost of approximately \$20,000. Since proper composite sampling may also be temporarily achieved by a minimum of three properly preserved grab samples, this expenditure is placed lowest on the list of priorities. Estimated time of completion, pending funding by the Village is Spring 2006.</p>
15	<p><b>Replace diesel generator drive engine.</b></p> <p>Requires electrician and outsourced generator contractor. Remove wiring from automatic transfer panel. Remove existing generator or diesel engine as needed. Replace and rewire transfer panel. Test. Unit should be capable of producing 50KVA at 480V 3Ø sufficient to operate, simultaneously, all 4 lift station and dosing tank pumps, the comminutor, emergency lighting and heat in the office building, and disinfection equipment</p>	<p><u><b>Completed Summer 2004</b></u></p> <p>Electrical contractor removed the old diesel unit and placed it in storage. He installed the new diesel power generator plant in an enclosure out of doors, removing the problem with noise and fumes inside the office/lab control building. A new transfer switch replaced the former switch inside the control building. The new unit is functioning properly and was installed in accordance with NEC and State Electrical regulations.</p>
16-19	<p><b>Equipment purchases: bid only for:</b></p> <ul style="list-style-type: none"> <li>▪ <b>Maintenance truck (Complete)</b> <b>Purchased Fall 2003</b></li> <li>▪ <b>Safety equipment (80%) Ongoing as needed</b></li> <li>▪ <b>Tools (80%) Ongoing as needed</b></li> <li>▪ <b>Inspection camera</b></li> <li>▪ <b>Backhoe/mini-excavator</b></li> </ul>	<p>A 2003 Chevrolet ¾ Ton 4x4 Cab and Chassis truck with a utility body was purchased by bid in 2003. The truck has been outfitted with strobe safety lighting.</p> <p>Additional safety equipment for the lab, plant, and vehicle has been procured. Remaining safety items are dependent upon completion of Item 8.</p> <p>Various hand tools, lawn maintenance tools, filter maintenance tools, and plant equipment maintenance tools have been purchased. (Tractor/mower, tiller, concrete saw, power washer, wrenches, etc) Remaining small item tools may be needed to service new equipment when installed.</p> <p>The sewer line inspection camera (\$20-40000) has not yet been let for bids due to financial constraints in the budget.</p> <p>The backhoe/mini-excavator (\$45000) has not yet been let for bid for the same reason.</p> <p>It is estimated the Village will make allowances in the budget for these items by Winter 2005.</p>



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20	<p><b>Administration/Billing offices</b></p> <p>Outsource - Construction of structure to house administrative and billing functions, segregated from the existing lab/disinfection/control building. Suggested size is 12 x 24' with one administrative office and one reception/billing area. The building is to be compliant with all applicable state and federal laws pertaining to publicly accessed buildings, including proper handicap accessibility.</p>	<p>The final list item for the renovation project is the building of a new segregated administrative office building. The current building currently houses the Village administrator, billing clerk, and plant operators. Additionally it houses the lab, plant controls, and lagoon blowers. The noise and potential for lab accidents deem this an unsafe practice. However, this is a major expense (est in 2001 at \$120000). As is the case with the most expensive of the list items, the Village is not in a position financially to budget its portion of this item at this time. It is estimated the Village will be in such a position by Winter 2006.</p>
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